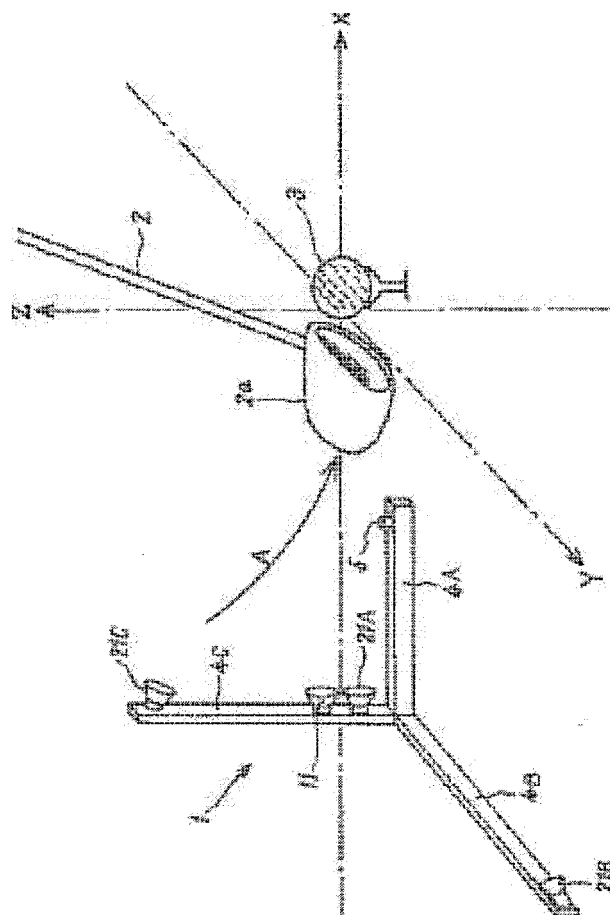


VELOCITY MEASURING DEVICE, SPEED MEASURING DEVICE AND METHOD, AND MOVING DIRECTION MEASURING DEVICE AND METHOD

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 - international: **A63B69/36; G01P3/36; G01P3/42; G01S15/58; A63B69/36; G01P3/36; G01P3/42; G01S15/00;** (IPC1-7): G01S15/58; A63B69/36; G01P3/36; G01P3/42
 - european:
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Abstract of JP 2002071802 (A)

PROBLEM TO BE SOLVED: To provide a velocity measuring device capable of accurately measuring the actual speed of a measuring object and its moving direction without requiring a complicated composition. **SOLUTION:** An ultrasonic wave is transmitted from a transmitter 11 toward an impact point of a ball 3, and a reflected wave from a head portion 2a passing the impact point is received by three receivers 21x, 21y, and 21z. Relative moving velocities of the head portion to each receiver are respectively calculated on the basis of Doppler signal components included in the reflected wave received by each receiver. The relative moving velocities are obtained as velocity component vectors of the head portion in each receiving direction and the velocity component vectors are added to determine a velocity vector of the head portion at the impact point. Magnitude of the velocity vector is used as speed of the head portion and its direction is displayed in a display part as a deviation angle in an X-axis direction in a horizontal plane and an angle to the horizontal plane.



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